

Application No: 10/539,843
Amendment A
Reply to Office Action Dated June 20, 2008

Attorney Docket No: 3926.162

IN THE FIGURES:

Figures 1-3, and Figures 9 and 10 are amended for clarity.

Replacement sheets are attached to this amendment.

REMARKS

Status of the Claims

Claims 22-43 are pending.

Applicants appreciate the indication that claims 25-34 and 38 are allowed, and that Claims 23 and 24 would be allowable if rewritten in independent form. Applicants respectfully submit that claim 22, from which claims 23 and 24 depend, is an allowable claim, and accordingly claims 23 and 24 are allowable by virtue of depending from an allowable base claim.

Claim 25 is amended to correct a typographical error.

Claim 35 is corrected to depend from claim 22.

Claim 37 has been amended for clarity.

New claim 44 is a combination of claims 22 and 39. Further support for claim 44 can be found in the specification, paragraph [0011], providing "Inventively, the reflector is now designed such that it can be pivoted such that its serves as mechanical protection for the directional loudspeaker's sound source. This protection is particularly against environmental influences such as soiling and moisture."

Remaining claims are amended in accordance with the recommendations of the Examiner.

Drawings

New corrected drawings are required because figures 1-3, 9 and 10 are dark or unclear in certain areas.

New drawings are submitted herewith.

Claim Objections

Claims 35 and 36 are objected to because of the following informalities: Claim 35 is dependent on cancelled claim 1. Claim 36 is dependent on improper claim 35.

In response, claim 35 is corrected to depend from claim 22.

Claim Rejections - 35 USC § 112

Claims 40-44 are rejected under 35 U.S.C. §112, second paragraph.

Claim 40 lacks antecedent basis for "the people or objects" in lines 1 and 2 and is grammatically and idiomatically awkward

Claim 41 is dependent upon rejected claim 40.

Claim 42 lacks antecedent basis for "the people or objects" in lines 2 and 3.

Claim 43 is dependent upon rejected claim 40.

In response, Applicants amend the claims to

- provide antecedent basis for "the people or objects" and "the locality".
- use proper active process steps, and
- use more grammatically correct language.

Specification

Paragraphs [0002] and [0010] improperly refer to specific claims.

Apparently the Preliminary Amendment filed June 20, 2005 was not entered. Accordingly, Applicants herewith request amendment of these paragraphs to remove reference to specific claims.

Further, the abstract is objected to for containing the phrases, "The invention describes..." and "The invention provides...".

In response, Applicants revise the Abstract to conform to the amended claims (135 words total).

Claim Rejections - 35 USC § 102

Claims 22 and 37 are rejected under 35 U.S.C. §102(a) as being anticipated by Kinya Japanese Patent Publication 2005073126A.

According to the Examiner, regarding claim 22, Kinya discloses every element of the claim, including the limitation “the housing is mounted on a support so as to be able to pivot and tilt relative to said support” (referring to Figs 1-3 and abstract translation).

Applicants respectfully traverse. Kinya does not teach this claim limitation which is material to claims 22 and 37.

Claim 22

As correctly understood by the Examiner, the present claims are directed to a directional loudspeaker, with at least one ultrasound loudspeaker as a highly directional sound source, and a pivotable reflector for deflecting the directional sound.

As explained in paragraph [0031], the reflector is most effective at an angle of 45° in the sense that the reflector area (54) reflects the sound from the array completely. An angle of greater than 45° requires a larger reflector, and an angle of less than 45° results in partial coverage of the reflection by the base area. So, how can a large section of the environment be targeted if the of the reflector loses effectiveness of the reflection angle is greater or less than the optimal angle?

As explained in paragraph [0011], in the preferred arrangement as claimed in claim 22 the directional loudspeaker housing itself is not mounted solidly on a support but rather the housing is mounted on a support so as to be able to pivot and tilt relative to said support. Assuming that the orientation of the reflector with respect to the sound source remains the same (e.g., at the optimal angle of 45°), it becomes possible, by pivoting and/or tilting the housing, to pivot the entire arrangement including the reflector and the sound source. When “aiming” is done by changing the relationship between housing and base, the reflector is free to maintain the optimal reflection angle to the speaker. This allows the spatial area to which sound can be sent directly by means of the directional loudspeaker to be extended significantly (claim 22), and allows optimal reflection.

Kinya

Turning to Kinya, this reference appears to concern countering the sharp directivity of sound emissions from an ultrasound source, which sharp directivity may not be suitable for use in, e.g., home entertainment. Kinya shows sets of louvers for vertical directing of sound, and additional sets of louvers for vertical direction of sound, by way of which reproduced

sounds can be converged or diffused in accordance with the situation of listening.

Accordingly, while the present invention provides an improved way to maintain directivity yet be able to aim over a greater area (azimuth), Kinya does not maintain directionality. While the present claims require the housing to be tilted relative to the base, or inner housing to be tilted relative to the outer housing, so that the reflector and speaker arrangement can target a broader area with good reflectivity, Kinya has no such teaching. In Kinya only the louvers are moved (with knobs 27A, 27B), never the speaker or speaker housing. The housings shown in the figures are mere flat boxes, with no means provided for tilting up or down.

Claim 37

According to the Examiner Kinya discloses a method for operating a directional loudspeaker, comprising: emitting highly directional sound from a sound source via at least one ultrasound loudspeaker (1), and deflecting the emitted sound by means of a reflector swivel-mounted on the housing (20A, 20B), wherein for the directional orientation of the sound the housing or the inner part of the housing with which the reflector is connected is tilted or pivoted relative to the base of the housing or its supplemental housing outer part (See Figs. 1-3 and abstract translation).

Applicants respectfully point out that Kinya does not disclose the important claim limitation of having not only (a) the reflector but also (b) the housing mounted for tilting.

Claim 37, as amended for clarity, is directed to a method for operating a directional loudspeaker, wherein, for the directional orientation of the sound, not only is the reflector used to deflect sound, but

- the housing includes a base and is tilted or pivoted relative to the base or,
- in the case that the housing is comprised of an inner part on which the reflector is mounted and a supplemental housing outer part, the inner part of the housing with which the reflector is connected is tilted or pivoted relative to the supplemental housing outer part.

The aiming of the sound is thus a result of the joint action of (a) the reflector and (b) the base. For the same reasons as discussed with respect to claim 25, this allows the spatial area to which sound can be sent directly by means of the directional loudspeaker to be extended significantly, with optimal degree of reflection.

There being no teaching in Kenya relevant to the present invention as claimed in claims 22 and 37, withdrawal of the rejection is respectfully requested.

Claim Rejections - 35 USC § 103

Claims 39 and 40 are rejected under 35 U.S.C. §103(a) as being obvious over Kinya in view of Lin (U.S. Patent No. 5,914,700).

Regarding claim 39, Kinya does not expressly disclose the sound source is mechanically protected by pivoting the reflector. Lin teaches a louver structure for a loudspeaker housing with slats which close to protect the speaker against duct accumulation (See Fig. 1 and abstract.

Regarding claim 40, the combination of Kinya in view of Lin further discloses the reflector is oriented suitably for the purpose of radiating to a specific location (See translation abstract).

In response, Applicants respectfully point out that Kinya is concerned with diffusing sound so as to cover a broad area, and Lin is not concerned with directional sound.

More importantly, neither reference teaches aiming of directional sound via the combination of (a) a pivotable reflector for deflecting the directional sound, and (b) a housing mounted for tilting and pivoting. By this new combination it becomes possible to target any location in a broad field, with good reflectivity of sound, as compared to any of the cited teachings.

Claims 39 and 40 are thus patentable by virtue of their dependency from otherwise patentable claims.

Allowable Subject Matter

Claims 25-34 and 38 are allowed.

The prior art does not disclose or fairly suggest a swivel mounted reflector moved via a bearing along an upper wall of an ultrasound loudspeaker housing or a reflector connected to and mounted on the top wall of the speaker housing such that it can be moved along the top of the wall.

Claims 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

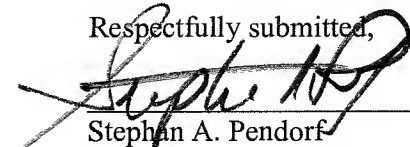
In response, Applicants appreciate the indication of patentability, submit that claim 22 is patentable for reasons set forth above, and submit that dependent claims 23 and 24 are patentable by virtue of their dependency from otherwise patentable claims.

The Commissioner is hereby authorized to charge any fees which may be required at any time during the prosecution of this application without specific authorization, or credit any overpayment, to Deposit Account Number 16-0877.

Should further issues remain prior to allowance, the Examiner is respectfully requested to contact the undersigned at the indicated telephone number.

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Respectfully submitted,



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